

...from concept to acquisition

NAVAL WIRELESS NETWORKS SUMMIT

*Sponsored by: NETWARCOM and PEO ships
Hosted by: SPAWAR AND PEO C4I*



TOPICS

- **Background**
- **Schedule**
- **Ship Survey and Components**
- **Certifications/Approvals**



SMT

- Provides an automated capability to track and report the movement of personnel, supplies, and equipment during routine loading and offloading operations, contingencies, and exercises.
- Uses existing systems and hardware with a shipboard wireless network.

Phases

- **Phase 1:** Ship Class Surveys and Prototype Planning
- Conduct drawing studies and physical ship surveys to determine optimal hardware locations and installation techniques for SMT gear aboard each of the following classes of amphibious ships: LHA, LHD, LPD, LPD-17, LSD 41, and LSD 49.
 - Began Dec 02. LPD-17 will be complete in 05 after government receipt of vessel.

Phases (cont.)

➤ **Phase 2: SMT Proof of Concept**

- Conduct four Proof of Concept events prior to a decision on full SMT implementation.
- Conduct detailed communication study and provide recommended solutions/diagrams to support the automatic transfer of AIT data from:
 - Ship to Ship
 - Ship to Beach
- Began in Oct 03 with Communications Test #1
 - Successful data transfer between two “ships” in lab at St. Juliens Creek Naval Depot.

Phases (cont.)

- **Phase 3: Full SMT Implementation**
 - Submit requirement to SPAWAR PMS-161/165 once demos are completed.



Proof of Concept

Events:

1. 26 MEU coordination for scanning personnel and equipment.
2. Communication tests 2 & 3 to conduct database synchronization between ships and the beach.
3. 26 MEU TCAT – an at sea event off Camp Lejeune to test data transfer in an exercise/deployed environment.
4. 26 MEU PMINT – an at sea event off Camp Lejeune to conduct further refinement of installed system in an exercise/deployed environment.

Proof of Concept

- Project Team will retrain personnel and evaluate results of each event.
- Results will be published via Naval Message traffic.



Ship Survey's

- USS WASP (LHD 1)
- Ship requires 10 Access Points (AP)
 - Some wiring for power (Ship's power)
 - Will provide coverage for:
 - Hangar (2 AP)
 - Top of vehicle ramp to flight deck (1 AP)
 - Upper and lower vehicle stowage (2 AP)
 - Office spaces (5 AP)
- USS Nassau (LHA 4) – yielded similar results.



Ship Survey's

- USS Shreveport (LPD-12)
- Ship requires five Access Points (AP)
 - Some wiring for power (Ship's power)
 - Will provide coverage for:
 - Upper and Lower vehicle stowage (3 AP)
 - Helo Hangar (2 AP)
 - Office spaces receive coverage from AP's.



Ship Survey's

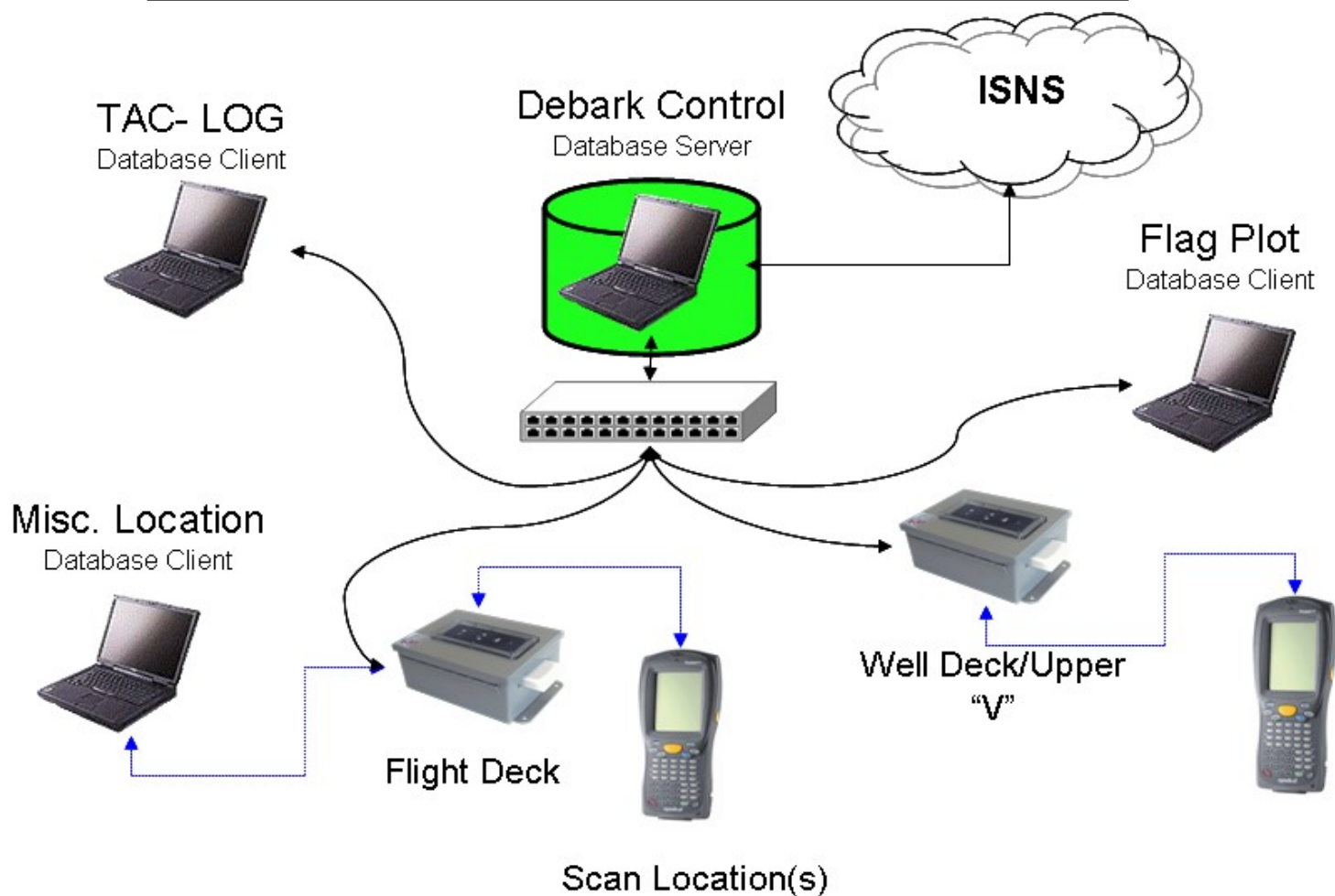
- USS Whidbey Island (LSD-41) & USS Oak Hill (LSD - 51)
- Ship requires four Access Points
 - Some wiring for power (Ship's power)
 - Will provide coverage for:
 - Turntable (2 AP)
 - Troop Office Spaces (2 AP)



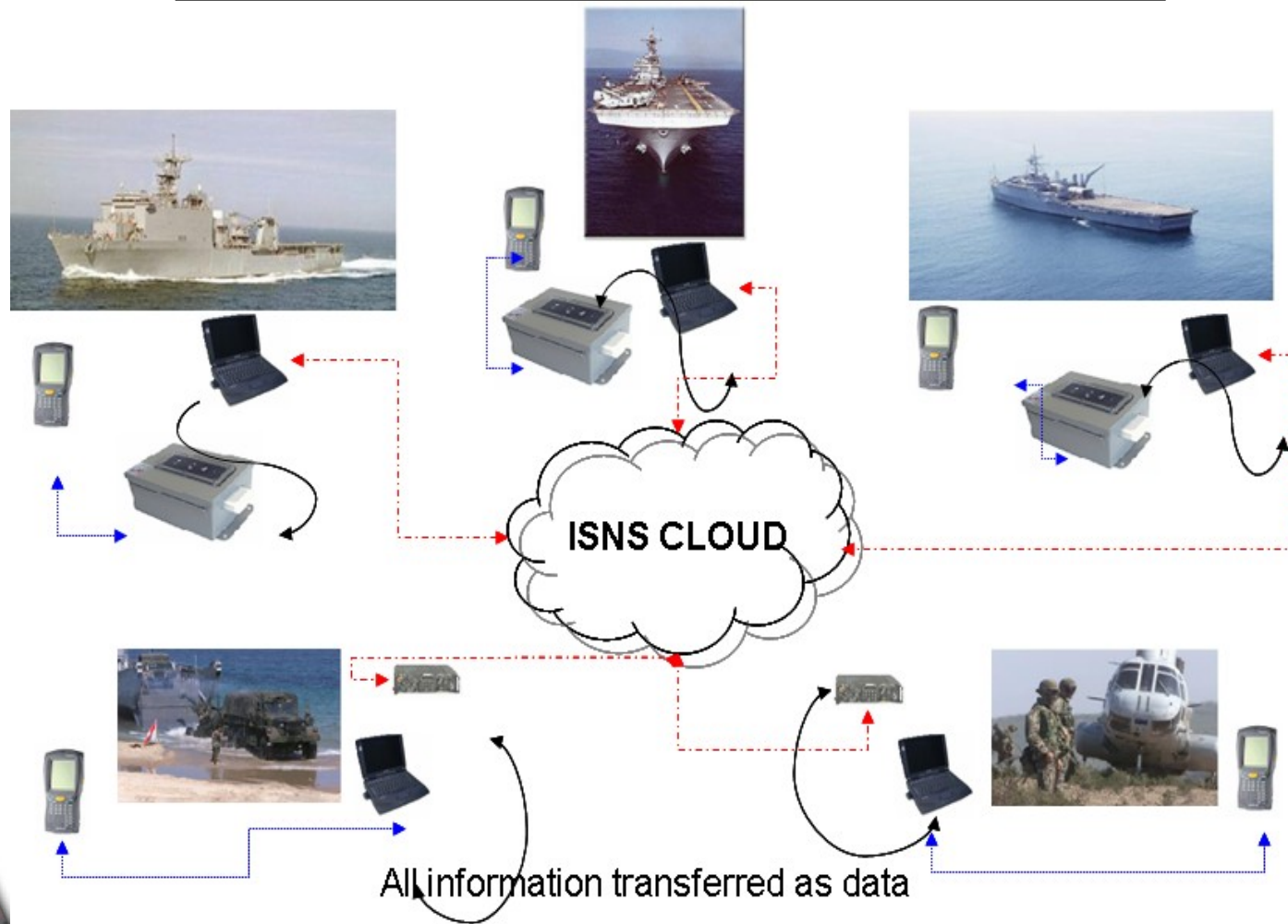
Progress to date

- LOGAIS v7.0, AALPS, and ICODES certified to operate on ISNS.
- Access Point certified to operate on ISNS.
- TEMPALT packages developed and approved for each ship in KEARSARGE ESG.
- Communications studies underway for “best fit” hardware – INMARSAT.

Ship Configuration



ESG Configuration



MDSS II

- Automated information system capable of supporting rapid military deployment.
- Provides various echelons of the MAGTF the ability to:
 - Provide unit level database capable of supporting rapid deployment.
 - Build and maintain a database containing force and deployment data.
 - Retrieve information in near real-time, in the form of reports and ad hoc queries.
 - Utilize Automatic Identification Technologies (AIT) to collect data and track equipment.
 - Interface with external databases.

Hardware

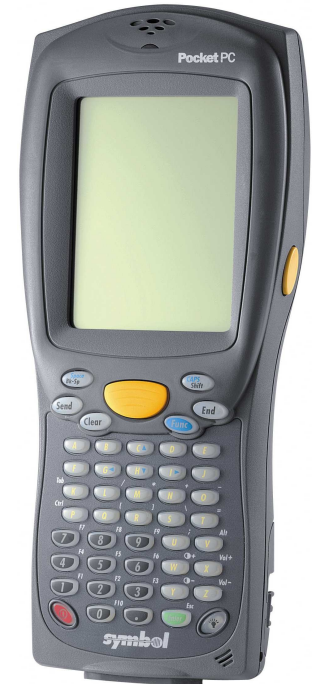
Dual Mode 3eTi 521N Wireless Gateway

- IEEE 802.11b
- IrDA
- Conventionally powered (standard 115v AC)
- Splash-proof NEMA approved Hoffman enclosure
- Shipboard Environment Qualified



Automatic Identification Technology (AIT)

- Pocket PC 2002
- Pico Image Scanner – will scan linear and all 2-D barcodes including data matrices.
- 802.11b RFDC-WiFi
- FIPS 140-2 Encryption Software
- Qtr VGA color touch screen w/ full alpha numeric keypad.





Certifications/Approvals

- WLAN Waiver Approved – COMNAVFLT MSG 3 MAR 04
- ISNS Certification – SSIL – 04-0006
- TEMPALTS Approved by NAVSEA



WLAN Hardware

- Successfully completed NAVSEA set of shipboard environmental qualification tests prior to installation approval.
 - MIL-S-901D Lightweight Shock
 - MIL-STD-167 Vibration
 - MIL-STD-451E EMI Emissions and Susceptibility
 - MIL-STD-810F Humidity
 - FCC Part 15, Subpart B



Navy Certification & Approval

CINCLANFLT & SPAWAR control connections to shipboard LANs

- Requires Afloat Network Compatibility Testing
- Successfully completed in December '01

3e-521N Wireless Gateway approved for connection to Afloat Network on DDG 83

SPAWAR SSIL-02-0347



Certification & Approval

DD 1494 in process

Approval granted for 3e-521N and PCMCIA
RF LAN Cards

- NAVEMSCEN circulating to Host Nations.

HERO & HERF Certification

- “Hazards of Electromagnetic Radiation to Ordnance (HERO), Personnel (HERP), and Fuel (HERF) system certification for utilizing 3eTi wireless series gateways and wireless PCMCIA LAN cards onboard Arleigh Burke class ships”.
- 10 ft separation from susceptible ordnance, devices and materials.



Training

- Training in Norfolk for personnel assigned to the ESG (22-23 Aug while underway to Lejeune).
- Training in Camp Lejeune for MEU personnel.
- Will conduct separate sessions for Communications and Embark personnel.
- Training will be conducted by Project Office personnel.

Installations

- Installation for Kearsarge ESG complete (June '04).
- Ship visit requests coordinated via SURFLANT.
- Installations performed by SPAWAR Contractor Support- Global Services Corps.

Benefits

- Wireless connections to the ISNS for Marine Corps and Navy personnel.
- Enables future capabilities – mechanics accessing supply systems and tech manuals, Navy supply real-time inventory, electronic triage, faster NEO receiving, etc...
- Reduces manual manifest process.
- Increases situational awareness in ESG/MEU staffs.
- Enables precision logistics support – know exactly what is ashore.



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